

WHAT IS CLAIMED IS:

1. A cloned gene encoding the expression of an antigenic mutant pertussis toxin with substantially reduced enzymatic activity.

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2. An antigenic mutant pertussis toxin having substantially reduced enzymatic activity.

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3. The mutant toxin of claim 2 having a single amino acid substitution comprising replacing arginine with lysine at position 9 of S1 subunit.

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4. A composition comprising immunogenic amount of the toxin of claim 2 in a pharmaceutically acceptable carrier.

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